

INTERNATIONAL CITY MANAGERS' ASSOCIATION

1313 EAST 60TH STREET - CHICAGO 37, ILLINOIS

This report was prepared in response to an inquiry from a municipality subscribing to this Service and is distributed to all subscribers. The contents may not be reproduced without permission.

Route To:

Return To:

MANAGEMENT RECORDS FOR CONSTRUCTION PROJECTS

What records are needed for management control of projects included in the annual construction program?

With large-scale municipal public works programs underway all over the United States, many municipal chief administrators are faced with the necessity of establishing orderly procedures for the detailed scheduling, coordination, and control of work involving millions of dollars in capital expenditures.

Preliminary Work. A great deal of long-term preliminary work must be done in physical planning, financial planning, and capital budgeting before any construction project can actually be started. The various steps involved in detailed capital budgeting and the scheduling of projects for the annual construction program are described in Chapter 12 of the ICMA training manual "Municipal Finance Administration." This chapter includes a number of suggested forms that are useful for the chief administrator in planning construction projects. The steps involved in securing approval for projects for a particular year and determining the priority or sequence of improvements is discussed also in MIS Report No. 55, "Scheduling Projects for the Annual Construction Program."

When all of this work has been done, however, and the operating budget for one fiscal year has been drafted with the scheduled projects to be undertaken, there still remains the job of controlling and coordinating the actual steps involving surveys, plans, estimates, contracts, bids, and actual construction. This report suggests forms and procedures that will be useful to the chief administrator in controlling these construction projects, and three suggested forms are reproduced at the end of this report.

Accounting Records. As far as possible both project cost and project expenditure ledgers should be maintained by the city. The cost records may be maintained either by the finance department or by the public works department, depending on the size of the city, organization, administrative practices, and the complexity of the work undertaken. No matter what arrangement is made, the finance department is responsible for ultimate accounting control and usually has the advantage of having the use of accounting and tabulating machines for rapid and accurate posting and compilation of reports.

In Long Beach, Calif., for example, the department of engineering maintains a project cost ledger with pertinent information on job title, description, fund number and title, contractor's name, construction period, amount of contract, and detailed records of allocations and expenditures. The objective is a detailed record of the total project cost. This ledger includes cost accounting records developed by the engineering department on (1) preliminary engineering and surveys, (2) force account work, and (3) construction engineering and inspection. In addition, the general accounting officer of the city controls all allotments and expenditures. No matter what systems or records are employed, the important consideration is to develop all of the direct and indirect costs going into a construction project.

The Project Cost Ledger (see Form No. 1) is suggestive of the types of information that should be developed even though the form may be changed considerably to be adapted to machine accounting. This is an accounting document for segregating project costs according to basic classifications, whether construction is done by contract, by force account, or by a combination of these two methods. The project cost ledger should be posted during execution of the construction project to show its entire cost. This record not only provides an analysis of actual cost as compared with estimates, but is of value also in estimating costs for other similar projects, in assuring that all expense has been accurately distributed, and in providing an actual cost of the finished improvement for entry in the city's property records.

The first four columns on the project cost ledger are self-explanatory; the classifications of project costs (columns 5-10) are:

Column 5: Preliminary Engineering and Survey Expense. Includes all expense for surveying, design, drafting of plans, and other engineering work necessary for preparing for, and prior to, actual construction work. Such expense should be reported by the engineers on their daily, weekly, or semimonthly time reports. Any payments to consulting engineers for preliminary services also should be charged here.

Column 6: Lands, Easements, and Rights-of-Way Expense. Includes all costs incurred in the acquisition of real property or rights therein necessary for the completion of the project.

Column 7: Contract Expense. Includes all payments made to contractors.

Column 8: Force Account Expense. Covers labor cost for city employees either to construct the project or to supplement the work under contract. Cost of labor, materials, equipment, and construction overhead should be charged here. On projects where the city buys part or all of the materials or furnishes equipment, such expense should be classified here.

Column 9: Construction Engineering, Supervision, and Inspection Expense. Embraces expense incurred after completion of plans and other work preliminary to actual construction. The charges are obtained from the periodic summaries of engineering costs (see below) which provide a distribution of the time and other expense for each job or project.

Column 10: Legal, Administrative, and Overhead Expense. For all project costs not covered in any of the above groups. Charges to this account include advertising for bids, legal services, damages paid by the city, interest during construction when item is considered as a part of project costs, and any general administrative expense or overhead distributed to projects.

The costs of city engineering services should be allocated to columns 5 and 9 above. Each employee engaged in survey, design, drafting, inspection, and other engineering work, should prepare daily, weekly, or semi-monthly time sheets showing the amount of time charged for each project, activity and agency for which work is performed. These data can then be summarized for posting to the project cost ledger.

Monthly reports can be prepared showing the hours and costs of engineering work by construction projects, by work operation (survey, design, inspection, and

so forth), and by city agencies for which the work is done. Such reports are, of course, useful to the city engineer and the public works director in staff management and enable them to plan and control work more effectively. Such records also enable the city engineer or public works director to better support his budget requests with factual data showing past activities as compared with estimates for future work.

The chief accounting officer should maintain some form of project expenditure ledger to control funds provided for construction projects and to insure against overexpenditure. This ledger should show the amount authorized and set aside for the project, the amount of expenditures and encumbrances, and the amount available for further commitment. A sheet also should be included showing the amount authorized for construction purposes but not yet allocated to specific projects.

This ledger thus shows at any time (1) the amount provided for construction projects, (2) the amount available for additional projects, (3) the amount which has been expended or encumbered against each project, and (4) the amount allocated to specific projects but not yet encumbered or expended.

This ledger provides control over construction funds whether they are provided from bond issues or from other city funds. Space should be left at the top of the ledger sheet for the name of the project or the project number, the account number, location, date authorized, and sources of funds. The columns on this sheet could carry the following data:

1. Date.

2. Description. To indicate the bond ordinance or other source of funds; to show the purpose or in whose favor a commitment or expenditure has been made; or to indicate the project to or from which an allocation or transfer has been made.

3. Reference. For entering the number of the receipt or transfer number, the contract number, or the voucher number.

4. Receipts or Allocations. For entering amounts received for construction purposes as the result of bond issues, transfers from other funds, or from the sale of articles originally paid for from construction funds (e.g., blue prints); also for recording allocations of funds to specific projects or transfers between projects.

5. Expenditures or Encumbrances. For entering the amount of all contracts or other commitments incurred against the project, and all expenditures not previously entered as encumbrances.

6. Available Balance. The difference between the totals of the Receipts or Allocations column and the Expenditures or Encumbrances column.

Construction Progress Records. The chief administrator and other city officials will want to know at all times the status of every construction project from the time it is authorized until completion of the job and acceptance by the city. Some type of Project Control Record (see Form No. 2) is helpful. One of the most important purposes of such a form is to enable the chief administrator to know whether city employees and contractors are meeting their time schedules for the projects. The form is helpful also in settling claims under the contract and in making final settlement.

The Project Control Record should be prepared for each construction project. The form shows target and actual completion dates for preliminary and final plans, advertising for bids, receipt of bids, awarding of the contract, estimated time to complete assessments, starting date for the project, and completion date. Information is shown also on plans and surveys, land acquisition, guarantee period, surety bonds, inspection on the job and final acceptance by the city. Every step in the construction project is included from the time the money is authorized until the work is finally accepted by the city government.

The reverse side of the Project Control Record can be used to help coordinate the construction work of various city departments and agencies. Each department and agency which may have conflicting work is listed. The heads of departments and agencies send memorandums to other departments and agencies informing them of their construction program and requesting that if there is any conflict in work to be done, to so notify and give information as to how long it will take to complete the work.

This is helpful in arranging in advance for traffic signs, detours, and traffic routings for street construction work and in keeping public utility companies posted at all times of new construction work. An example of the use of this coordination form is that all sewers, water, gas, and underground utilities will be completed prior to the paving of a street scheduled to start on a certain date.

Depending upon the number and complexity of projects undertaken, it may not always be necessary to maintain a form as detailed as the Project Control Record. It may be easier in a particular city to break up the information into two or more records. Long Beach, California, for example, uses a progress chart which lists the various construction projects in priority order. This chart covers all stages of a project up to the actual start of construction and includes preliminary estimates, work sheets, designs, checking, field inspection, tracings, estimates, specifications, advertising for bids, and execution of the contract. At the beginning of construction a card file is prepared which records all steps in construction, including execution date, progress, payments, time limits, and final acceptance of the completed job.

Such detailed records generally are not necessary in smaller cities. Two Rivers, Wis. (10,243), uses a simple check-off sheet at the start of a construction project to make note of special notifications to utilities and other agencies and to keep a simple control over the general phases of the job. This is adequate in smaller cities where the city manager, city engineer, or superintendent of public works can make almost daily field visits to check on the status of the project. The important consideration is that some systematic attempt should be made to keep records which are informative to the chief administrator and which can be used in preparing reports for the city council and the public.

Some form of an Annual Project Schedule (see Form No. 3) can be set up to summarize all of the construction projects that are in process during a fiscal year. The form is quite brief and adequately condenses the information shown on the Project Control Record (Form No. 2) which is set up for each separate project. In a larger city the Annual Project Schedule would serve for periodic reports to the chief administrator while the Project Control Record could be used for the guidance of departmental officials. In smaller cities the Annual Project Schedule might not be necessary because the chief administrator could summarize the status of a small number of projects in narrative form for the city council and general public.

These various types of reports can be summarized and prepared as charts in graphic form in two or more colors. Such charts can be mounted on heavy paper or cardboard for posting on bulletin boards or used in other ways for public information.

NOTE: Grateful acknowledgment is made to the following persons who reviewed this report and offered helpful suggestions: Robert L. Funk, assistant director, Municipal Finance Officers Association; P. W. Homer, director, department of research and budget, Kansas City, Mo.; and City Managers John E. Dever, Two Rivers, Wis., Russell E. McClure, Corpus Christi, Tex., and Samuel E. Vickers, Long Beach, Calif.

PROJECT COST LEDGER

Improvement _____ No. _____ Fund No. _____

Contractor _____ Address _____ Contract No. _____ Date _____

Contract Time _____ days. Guarantee Period _____ Retainer \$ _____ Due \$ _____ Total Cost \$ _____

Paid from (specify) \$ _____ Description _____

EXPENSE ITEMS

DISTRIBUTION OF COSTS

Date	Description	Reference No.	Amount	Prelim. Eng'ng. & Surveys	Lands, Easements, & Rights- of-Way	Contracts	Force Account	Const. Eng'ng., Supvn., & Inspection	Legal Admin., & Overhead
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

Form No. 2

PROJECT CONTROL RECORD

PROJECT NO. _____
 PROGRAM YEAR _____
 PROJECT CLASSIFICATION _____

Name of Project: _____
 Location of Project: _____
 Description of Project _____

Originated by: _____ Date: _____

Preliminary Estimate:

a. Plans and Surveys	\$ _____	(1) Cost to City	\$ _____
b. Land (ROW)	\$ _____	(2) Cost to Others	\$ _____
c. Construction	\$ _____	Total	\$ _____
Total Cost	\$ _____		

Relation to Comprehensive Plan: _____

Status of Plans _____

Estimated Completion Date:	a. Preliminary Plans	Actual
	b. Final Plans	Actual

Source of funds: City _____ Other _____

Funds Available _____ Fund No. _____

Council Approval of Preliminary Plans: Est. Date _____ Actual _____

Council Approval of Final Plans: Est. Date _____ Actual _____

Land Acquisition: Est. Date _____ Actual _____

Advertisement for Bids: Est. Date _____ Actual _____

Bids Received: Est. Date _____ Actual _____

Contract Award: Est. Date _____ Actual _____

Contractor: _____

Contract Price: \$ _____

Guarantee Period Expires: _____ Amount Retained: \$ _____

Surety: _____ Amount: \$ _____

Estimated time to complete Assessment: Est. Date _____ Actual _____

Project Start: Est. Date _____ Actual _____

Completion: Est. Date _____ Actual _____

Job Inspected by: _____

Final Inspection: _____ Date _____

Acceptance: _____ Date _____

Remarks: _____

(OVER)

(Form No. 2--continued)

COORDINATION

Dept. or Agency	Date Notified	Date of Answer	Date of Completion Conflicting Work		Remarks
			Est.	Actual	
Street					
Sewer					
Water					
<u>Gas</u>					
City					
Houston Natural					
Southern Comm.					
<u>Police</u>					
Traffic Signs					
Traffic Routing during constr.					
Electric Utility					
Telephone Company					
Fire Department					
Other (specify)					

Source: Developed and used in 1954 by City Manager Russell E. McClure, Corpus Christi, Texas.

ANNUAL PROJECT SCHEDULE

[illegible]

